EXHIBIT A

CLUSTAL W (1.7) Multiple Sequence Alignments

Sequence format is Pearson

Sequence 1: PF0148_3CPA_SEQIDN01 289 aa Sequence 2: gi4583152 282 aa

Start of Pairwise alignments

Aligning...

Sequences (1:2) Aligned. Score: 99

Start of Multiple Alignment

There are 1 groups

Aligning...

Group 1: Sequences: 2 Score:3912

Alignment Score 1827

CLUSTAL-Alignment file created [baaTpaykK.aln] CLUSTAL W (1.7) multiple sequence alignment

PF0148_3CPA_SEQIDNO1 MSGF gi4583152 ----

MSGFSTEERAAPFSLEYRVFLKNEKGQYISPFHDIPIYADKDVFHMVVEVPRWSNAKMEI
----STEERAAAFSLEYRVFLKNEKGQYISPFHDIPIYADKDVFHMVVEVPRWSNAKMEI

PF0148_3CPA_SEQIDNO1 gi4583152

PF0148_3CPA_SEQIDNO1 qi4583152

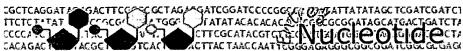
DVCEIGSKVCARGEIIGVKVLGILAMIDEGETDWKVIAINVDDPDAANYNDINDVKRLKP DVCEIGSKVCARGEIIGVKVLGILAMIDEGETDWKVIAINVDDPDAANYNDINDVKRLKP

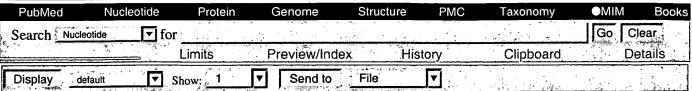
PF0148_3CPA_SEQIDNO1 gi4583152

GYLEATVDWFRRYKVPDGKPENEFAFNAEFKDKDFAIDIIKSTHDHWKALVTKKTNGKGI GYLEATVDWFRRYKVPDGKPENEFAFNAEFKDKDFAIDIIKSTHDHWKALVTKKTNGKGI

PF0148_3CPA_SEQIDNO1 gi4583152

SCMNTTLSESPFKCDPDAARAIVDALPPPCESACTVPTDVDKWFHHQKN SCMNTTLSESPFKCDPDAARAIVDALPPPCESACTVPTDVDKWFHH--- 





☐ 1: AF108211. Homo sapiens cyto...[gi:4583152]

Links

LOCUS AF108211 846 bp mRNA linear PRI 14-APR-1999 DEFINITION Homo sapiens cytosolic inorganic pyrophosphatase mRNA, partial cds.

ACCESSION AF108211

VERSION AF108211.1 GI:4583152

KEYWORDS

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (bases 1 to 846)

AUTHORS Rumsfeld, J., Ziegelbauer, K. and Spaltmann, F.

TITLE Cloning, expression, affinity purification and characterization of

polyhistidine-tagged cytosolic Saccharomyces cerevisiae and human inorganic pyrophosphatases for differential screening of compounds

for antifungal activity

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 846)

AUTHORS Rumsfeld, J., Ziegelbauer, K. and Spaltmann, F.

TITLE Direct Submission

JOURNAL Submitted (20-NOV-1998) Research Antiinfectives 1, Bayer AG, P.O.

Box 10179, Wuppertal 42096, Germany

FEATURES Location/Qualifiers

source 1..846

/organism="Homo sapiens"

/mol_type="mRNA"
/db_xref="taxon:9606"
/cell_line="BjAB"

/cell_type="B-cell"

CDS <1..>846

/note="iPPase"
/codon_start=1

/product="cytosolic inorganic pyrophosphatase"

/protein_id=" <u>AAD24964.1</u>" /db_xref="GI:4583153"

/translation="STEERAAAFSLEYRVFLKNEKGQYISPFHDIPIYADKDVFHMVVEVPRWSNAKMEIATKDPLNPIKQDVKKGKLRYVANLFPYKGYIWNYGAIPQTWEDPGFNDKHTGCCGDNDPIDVCEIGSKVCARGEIIGVKVLGILAMIDEGETDWKVIAINVDDFDAANYNDINDVKRLKPGYLEATVDWFRRYKVPDGKPENEFAFNAEFKDKDFAIDIIKSTHDHWKALVTKKTNGKGISCMNTTLSESPFKCDPDAARAIVDALPPPCESACTVPTDV

DKWFHH"

BASE COUNT 270 a 155 c 201 g 220 t

ORIGIN

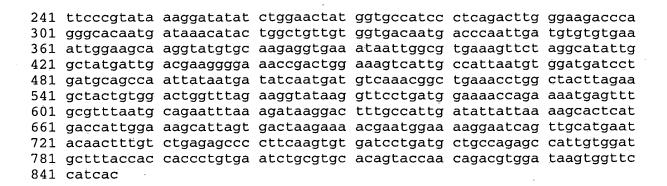
1 agcaccgagg agcgcgggc ggccttctcc ctggagtacc gagtcttcct caaaaatgag

61 aaaggacaat atatatctcc atttcatgat attccaattt atgcagataa ggatgtgttt

121 cacatggtag ttgaagtacc acgctggtct aatgcaaaaa tggagattgc tacaaaggac

181 cctttaaacc ctattaaaca agatgtgaaa aaaggaaaac ttcgctatgt tgcgaatttg

11



Disclaimer | Write to the Help Desk NCBI | NLM | NIH

May 1 2003 16:27:42